

the second syllable of the name of Undopherras is *do*, the sloping stroke to the left downwards being the vowel *o*, with which the *d* is inflected; and precisely the same mark which is found to represent *o* in the name of Zöilus.

To the second letter therefore in the name of Undopherras, I have assigned the value of *d*, but as this letter occurs again as the representative of the Greek double PP, it must have another value, and be equivalent to an aspirated or double *r*; and this indeed is the precise sound which the Sanskrit cerebral ढ *d* frequently has, as ढ *r*. Here then we find that by giving to this letter *s*, the value of the cerebral ढ *d* of the Sanskrit, it completely fulfils all the conditions in which it is found upon the coins; thus most satisfactorily establishing the correctness of the value which I have assigned to it, and at the same time leading to the discovery that the third letter of the Bactrian Pali name of Undopherras can be no other than *ph*, thus rendering the whole four characters literally Andophara.

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(*To be continued.*)

Notes of a March from Brimhan Ghat on the Nerbudda, to Umurkuntuk, the Source of that River. By G. SPILSBURY, Esq.

In the Asiatic Journal, for August 1834, appear some notes of mine from Tendookherie, across the valley of the Nerbudda south to the table land of the Puchmuree, or Mahadeo hills. In the following paper I propose to give the result of my observations from Brimhan Ghat to Umurkuntuk, the holy source of the Nerbudda river. The notes will comprise three different routes, and I have some hope that by the aid of the accompanying map, and the specimens forwarded for presentation to the Museum, that I shall have added a mite to the Geographical and Geological knowledge of this as yet little travelled portion of Central India.

In the construction of the map, for which I am indebted to the able pencil of Captain Reynolds, Madras Army, I have to remark that its correctness depends on the places written in Capitals, which are laid down from the map of these territories, furnished from the Surveyor General's office, on a scale of eight miles to an inch. The notes commence at Brimhan Ghat near Chawurputhur; on leaving which we struck off in a S.S.W. direction, crossing the valley of the Nerbudda, which yields but little variety to the geologist, being a fine rich black soil of decomposed trap, intermixed at the banks of most of the Nullas with calcareous tuffa.

At Beerkherie, the Shair river is crossed, its bed compact basalt, and the road lies through rich black soil up to Burheyta, where it changes to sandstone. This now insignificant village has been the site of a large city, and extensive vestiges of a fort, palace, temples, buolies, tanks, and gardens, are yet to be traced. The temples are generally Boudhist, or belonging to that æra, and five large images of compact basalt, three of which are standing, and two in a sitting posture, have been ignorantly assigned by the natives of this place to the five Pandoo brothers—Dhurum, Bheem, Urjoon, Sahdes, and Nukool.

Low sandstone hills, varying from a few feet to a couple of hundred, covered with thin jungle, is the characteristic of the country, with vallies of more or less extent of decomposed trap; about three miles east, near Nandeea, is a hill of quartzose pebbles; about 100 feet up is a deposit of steatite No. 1, called by the natives Gora Pan, and largely exported; in contact with it lie the specimens Nos. 2 and 3.

At Sreenuggur, the Omar nuddee, the bed of which is composed of the schist No. 4 and 5, and from a hill adjacent the limestone No. 6 is procured. The next five miles is a similar siliceous formation as that from Burheyta to Sreenuggur, when you come to trap boulders, making the road more or less stony and unpleasant. About three miles short of Dhooma, the road winds up a steep ghatee of compact basalt, at the top of which is an undulated table land of considerable extent. From this to Jhiria, where this table land is again descended, the country is of the uniform character found in trap formation; at Kuhanee, jasper and quartz No. 7, amygdaloid No. 8, and travertin No. 9. The beds of the Nullas are compact basalt; the only exception seen was at Pindraee, where the Thanwur Nulla (a feeder of the Wyn Gunga and Godavery,) is crossed, at which the limestone No. 10, crops out on its left bank.

At the bottom of the Jhiria Ghattee, the descent of which is neither so long or so steep as that ascending to Dhooma, boulders of indurated red clay, No. 11, are met with. The remainder up to Mundlah is a well cultivated plain. The ford of the Nerbudda is compact basalt, No. 14, and this specimen is a type of the formation wherever found in these territories.

Mundlah has been a place of note, but since General Marshall dismantled the Fort in 1818, the town has gone to decay, and is now but an insignificant village. The river being full here from bank to bank, 326 yards, and totally unfordable from hence to Ramnuggur, (a distance of twelve miles) has a very picturesque appearance, aided much by the ghats and temples along its right bank, and the mouldering battlements and bastions of the fort. From this we proceeded along

the right bank, all trap formation, road stony from boulders; about six miles crossed the Putwara nulla, where veins of wacke with feldspar No. 12 and feldspar No. 13 occur; after this the road is undulated, a series of ascents and descents through rather a dense tree jungle until you again approach and recross the river, the bed of which is trap, intersected in some places with veins of calcareous spar wacke No. 15, 16.

Ramnuggur in the days of the Gound Rajas, was a place of note. There is still an old palace of four stories, built by Hirdee Sah some 200 years ago, and half a mile off one by his Dewan, little of which remains beyond the walls, but of the palace, situated on the bank of the river, and looking up a long reach of it, little decay has taken place beyond what is to be expected from neglect and desertion.

The general feature is a square with an inner court, in the centre of which was a Tanka* (from whence I presume we got our tank) and garden. The whole of the rooms, especially of the lower floor, are occupied by the villagers, and a considerable number of families have found habitations therein. The village is now insignificant, and there are but very few remains of its former state, when kings held their court. In the village, and at the eastern side of the court of an old temple of Mahadeo is the stone on which, in Sanscrit characters, is graven the list of the sovereigns from Jadoo Rae, Sumbut 415, as detailed by Major Sleeman in the Asiatic Journal for August 1837. On leaving Ramnuggur we had to make a detour to the south, in order to get again into the direct road from Mundlah. The road is bad and stony; we passed up a defile, and crossed over a hill called Doondooch of trap formation. The ascent was easy, but the descent steep and stony, on which you emerge into an open and extensive plain; at the bottom of the Ghatee cross a small nulla, in which is found granite No. 17; a mile or two further is the Datta nulla, near the village of Lutooa. From this the specimens of limestone No. 18, 19, were procured, and from this locality lime for the buildings at Ramnuggur was made; about 6, cross the Mutyaree river, rather a large stream, which some way down joins the Banjur, which flows into the Nerbudda immediately opposite the Fort at Mundlah.

The ford of this nulla is composed of granite No. 20 and 21, but about two or three hundred yards further up the river a ridge of compact basalt crosses it, after this the soil changes to a sandy one, the general rock being No. 21, also intermixed with gneiss? No. 22, 23, and 24, syenite. At this place, Unjoneea (and where we regained the direct road from Mundlah)

* I first heard this word used by a native in Betoool district; on asking him if at the top of Bowergurrh there was any spring, he said no, but there was a Tanka or place made of pukka, stones and cement, for holding water.

was shot by Captain Tebbs, 33rd Regiment of Native Infantry, a pair of the horn-bills (first seen in the dense jungle on the banks of the river near Ramnuggur,) and designated in Cuvier's Animal Kingdom, as *Buceros Malabaricus*; the bird was also seen at Umerkuntuk, but I am not aware of its being met with in any other part of these territories.

Our next march was near Bichia to the Khoolar nulla, fourteen miles, the first two miles being the same primitive formation, granite and massive quartz, when we ascended a small ghatee of trap boulders, passing over a plain, little jungle, and scarcely any cultivation; about 9 a gradual descent to the Mutyaree nulla, the bed compact basalt; leaving a village, Oomurwaree, to the right; more cultivation about. From here to the Khoolar nulla small trap hills are crossed of the same formation.

The next was Motee nulla, 16 miles; up to the Dutla nulla the formation was the same basaltic one, but in the bed of this nulla granite same as No. 21, at Unjoonea. The soil now changes to a siliceous one, with large masses of white quartz jutting out on a bleak open plain, singularly devoid of the traces of man in the shape of cultivation or habitation. About eight miles a fine pebbly stream with well wooded banks is passed. The Hullohn, (which joins the Boornerh near the village of Ghooghree, on the direct road from Mundlah to Ramgurh,) about five miles more, over grass plains approach the gorge of hills, and the jungle becomes more dense; ascend a small ghatee, the Jogeegoopha, the hills on each side rising above, the formation is limestone No. 25 capped with trap. On descending towards the Motee nulla, it again becomes massive quartz. In this nulla we first observed the laterite No. 26, 27, 28, 29 (so extensive a component of the Mikul hills) iron ore No. 29, chert No. 30, indurated iron clay No. 31, sandstone No. 32, indurated clay and calcedony No. 33.

In this and the preceding march, the sal tree, in large clumps, gives the country a very peculiar appearance, and trees of any other kind are not general.

Rajadhar 14 miles, road good, undulated country, grass plains with clumps of the sal, formation laterite, with conical hills of trap up to Munglee, about which are some small Goandee villages, and cultivation. Soon after this the road lies between hills thickly wooded, and high grass; pass through a defile, the Sukra ghatee, in which is limestone No. 34, intersected by veins nearly vertical, No. 35, 36, 37, 38, 39. On emerging from this, there is a considerable open space up to Rajadhar on the Phene nulla, which is situated at the edge of a very dense jungle and hills. The bed of this nulla is chiefly large boulders of laterite, and a greenstone No. 40.

Boorla, about 15 miles by the footpath, and about 19 by the road which the cattle and baggage went.

On leaving Rajadhar the road lies between hills of laterite, close dense jungle, over a trap hill to Bunder Motee, spring and ghat, where limestone No. 41, and at the bottom of the descent steatite No. 42, and that with argillaceous veins No. 43; from this the descent is rough and stony, and just before reaching the stream Brinjuree, or Murrum Joree, the syenite No. 44, and in the bed of it granite No. 45, 46; intermixed are boulders of No. 40. On arriving at the nulla, bamboos are again observed, and the sal disappears. From this the road winds up a hill not very steep or long, pass along a flat, when a long steep stony descent commences, the chief rock being No. 45, 46; at the bottom emerge into a small level plain, the hills approaching on both sides; about two miles on the Puraha nulla is crossed, and again a mile or so on, when the road is more open, and the jungle by no means dense; in front are a range of small conical shaped hills of no great height, the ridge of one of which is passed, the first ascent of which is sandstone No. 47, next in strata running nearly north and south of clay-slate No. 48, and further on No. 49 of the same formation; after this the hills are entirely cleared, and the country is a very extensive open plain bounded to the north by the low conical hills which we have passed over, nearly bare or only stunted jungle, and behind, towering above, the line of the Mekul range. On leaving Rajadhur all the springs and nullas are feeders of the Mahanuddee. At Boorla is a small circular hill, evidently a similar formation to the hills last passed over, specimen No. 50.

Pando Tulao, eight miles, a march in the plain; the villages are more numerous and cultivation is extensive, much of it rice; a spur of the hills comes down close on this place, the formation of which is limestone No. 51, and in a small rivulet close to our camp, rocks were projecting at an angle of 45°, running east and west, and the strata so disposed, as to have much the appearance, at a short distance, of the scales on the back of the Manis; they were limestone No. 52.

Purureea nearly seven miles; the same plain. In this march a fine stream, the Hamph nulla, the bed of which is a reddish limestone No. 53. Purureea itself is a large village for this part of the country, the houses with one single exception (that of the Zemindar's, who was building a brick edifice) are all built of split bamboos, plastered for the walls, and grass chuppers.*

Umuldeha, nine miles; the same open cultivated country. About three miles on, cross a small nulla from the hills, skirting our left, the bed of which is limestone No. 54, 55, as also a small circular eminence No. 56;

* The cheapness of food here was as unexpected as agreeable to our people.

Seers per Rupee.	In camp	15 Ata	38 in the village.
	Ditto,	12 Gram	52 ditto.
	Ditto,	14 Rice	50 ditto.

at the next stream, close to the village of Kurpee, the same limestone forms the bed as at the Kamp nulla No. 53.

Khoorea, nine and three quarter miles. On leaving camp the Agur nulla, the bed of which is rolled pebbles and sand, is crossed, and the first two miles is over the plain we have had since Boorla, after which we entered jungle gradually increasing until it becomes a dense tree (among them the sal again) and grass forest, all the way to the Munyuree nulla, the bed of which is granite (with rolled pebbles and sand) as per specimens No 57, 58, 59, 60, 61; a little to the left of the ford is the steatite No. 62, strata running nearly east and west, diagonally crossing the bed of the stream, also parallel the quartz No 63, 64, in thin laminæ. At this place was shot by Lt. Clement Browne a beautiful squirrel, which Colonel. Sykes named *Sciurus Elphinstonii* (As. Jour. vol. i. p. 165); they are also found in the Mahadeo hills.

Kutamee, nine and three quarter miles. This march skirts the Munyarie nulla, and is thick tree and grass jungle, but good road, and slightly ascending the whole way; the formation is granite and massive quartz, with exception of the bed of a small nulla which was basalt. At the village the bed of the Munyarie had ledges of compact basalt running across, and close to that gneiss No. 65, and higher up hornblende with feldspar No. 66; beyond and below, granite No. 67 and 68.

Lumnee, nine and a quarter miles. This is a bad and difficult march for cattle and baggage, the road being very stony. We crossed the Munyarie immediately on leaving camp, and two miles on a bad stony descent to a small stream, and the ascent not much better; pass through a dense forest, the diameter of many of the sal trees was very great. On reaching a stream about three miles from our camp the road begins to wind up a very long, and in places steep ghatee. The jungle exceedingly thick, from the summit of which is an extensive view over the plains we have left. The formation is primitive rock, at the top mica schist No. 69, and gneiss No. 70, 71. On attaining the summit, bamboos were very luxuriant and dense for a mile or so, a feature in the scenery not observed in the forest below. The road now winds along the crests of hills which brings you to a descent of about half a mile (neither so steep or stony as the ascent) into the plain of Lumnee; a few huts constitute the village.

Umurkuntuk, the source of the Nerbudda, eleven miles. The bed of the nulla is trap No 72, and about a mile further a nulla cuts through a hill of micaceous schist No. 73, and bed of the nulla No. 74. The road now is a series of ascents and descents covered with jungle; formation granite No. 75, mixed with sienite No. 76, 77, 78, 79. At the Bhereegehur nulla, compact feldspar No. 80, and granite No. 81, compose its bed.

The remainder to Putpura nulla, seven miles, primary rocks, the jungle very thick and dense; the bed of this nulla is composed of rolled laterite and trap boulders, lying on granite and quartz, where the rock shows itself; half a mile on the Sampghur nulla is crossed twice, a fine stream, and water most excellent. From it the specimen No. 82 quartz, mica, and feldspar.

On crossing this stream the second time, the ascent of the Jogee ghatee commences; formation trap boulders. The ascent is about a mile, in places steep, but very good for all laden cattle, baring its steepness, there being no rocky steps or ledges in it; the whole very dense tree, bamboo, and grass jungle. To the left, and on the banks of the nulla, tokens of a former site of a village, evinced by the plantain and mango trees; with exception of No. 83 marl, and No. 84 lateritish clay, the whole of the upper part of the hill is laterite, as specimens No. 85, 86, and the very summit No. 87. On arriving at the top a fine open plain, with a few trees scattered about, give a very park-like appearance to the scenery.

I shall now return, and trace the direct road to this holy spot from Ramnuggur.

Ramnuggur to Ghooghree thirteen miles; for the first two miles the open cultivated plain of the Nerbudda, when you approach hills and enter a defile with a gradual ascent: about two miles further, you come to a pukka boulee of the same style as the buildings at Ramnuggur. The road gradually closes into a few feet, and becomes steeper, the hills on each side rising up 100 feet above the road. The whole ghatee called Bidee is stony and bad, with dense bamboo grass and tree jungle infested by tigers. The formation is trap. On attaining the crest at six miles, the road opens out again, and the hills recede right and left; the soil is siliceous with quartz (massive and crystallized) and calcedony strewed about. From hence to Ghooghree the country is rather open, jungle thin, small hills about, with valleys and streams, and here and there a Gound village, with patches of cultivation; road very good from the crest. The village is rather large for this part of the country, and on the banks of a very fine brawling stream 200 yards wide, the Boorhner.

Sulwah, nine miles. A mile and half on, cross the Boorhner a short distance below its junction with the Hullown, these united streams are very considerable feeders of the Nerbudda. The bed is rocky (basalt); on leaving it there is a steep stony ascent of about half a mile, and a mile and a half further another of about 100 yards, which is a spur of the Patungurh hill, the peak of which towers some seven or eight hundred feet above; on its summit there is said to be a spring of water, and many fine trees could be seen. The crest has some appearance of a fort, and the natives declare it to have been made by the Deotas; on passing this hill there is rather an extensive

plain to the south, with a few villages and some cultivation; the last two miles the hills gradually close in, and a defile with a gentle ascent is passed through, to the Tola of Sulwah, the village itself being off to the south-east about a mile.

Ramgurh, thirteen miles. The first five and a half miles is chiefly over a bare open undulated plain, crossed by a great number of little rivulets with a slight ghatee to descend; the road is then through a defile, along which flows the Kookrar and Bhurkindee nullas with lofty hills on each side, covered with dense jungle grass, bamboos, and trees, a distance of about three miles, when the Tendoo Ghatee, some 400 yards, is ascended; pass along table land, a mile or so when the hills recede, and an extensive valley running about north and south, not very broad, presents itself, through which rather a large stream, the Khurmer, flows; and at the east side and left bank on a small hill, is Ramgurh, the capital of a rajah, now lord of some 1400 villages; with exception of a pukka house, his residence, the village is entirely bamboo wattling and thatch.

Sumnapoor, nine miles. A good road up the valley of the Khurmer; several villages, and much more cultivation of rubbee than we have seen since leaving the valley of the Nerbudda.

Burbuspoor, six and a half miles. The road is the same as the preceding for the first two and a half miles, when we enter the hills on our left, and ascend a trifling ghatee called the Ghooghurwahee ghatee of about 400 yards, by no means steep, on attaining the crest of which, the aspect and appearance of the country is totally changed, partly from the predominance of the sal tree, and partly from the greenness of the grass; pass through a defile 200 yards wide, when the hills recede, and there is an open extensive plain with the Muchrar flowing through the village on its right bank.

Chukrar nulla, ten miles. Road lies across the valley of the Muchrar, through cultivation, about two miles, when the hills close in, and the Ludwancee ghatee is ascended, not long or steep, but stony; the descent is considerably steeper, but by no means bad for any cattle. On reaching the foot, skirt the hills on the right, plain level road, there being a large grass plain to the north; the last two miles bad and stony trap boulders.

Seeoonee nulla, ten and a half miles. On leaving the nulla small trap hills are skirted for the first three miles, when you enter a thick jungle and ascend the Mohtura ghatee, of easy ascent, the descent being steeper, but by no means difficult; the road then opens out into an extensive grass plain; it is to these grass plains that the thousands of cattle resort from the country below the ghats during the hot months; remainder open, constantly intersected with little streams, and no where did the water appear to be above a couple of feet below the surface.

Kurunjeea, eleven miles. The first part skirts and passes over some low trap hills up to the village Bukree, when the country opens out into a very large grass plain; the Nerbudda north, distant three or four miles; cross a stream, the Toorar, and up to the shoulder of a lofty hill with a conspicuous peak overlooking the village of Ramnuggur; remainder open; Umurkuntuk nine and half miles. The road lies through a small valley, in which flows the Kurmundal with lofty hills on each side, gradually closing in to the entrance of the pass, which becomes a dense jungle; the ascent is about a mile, and pretty steep, but not very bad for cattle; pass along a ridge where there is a small grass valley in which is a pool of water, called Hathee Dabur, and on descending a ridge, a spring issues from the head of a ravine, said to be the source of the Kurmundal nulla. There is a Chabootra, and many plantain trees at the spot, known by the name of Kurbeer Chabootra; after this two ridges are crossed, when you attain the table land, and about half a mile before reaching the Koond join in with the road from the Jogee ghatee, by which we ascended in the former march.

I have said but little on the geological formation of this route, for the reason that it is so simple, and affords so little variety; the first ghatee, which is the same range as the Doondoo ghatee, is unvaried basalt, and so continues the whole way the same formation, the hills and peaks from Patungurh being capped with laterite, and all the beds of nullas basalt; little laterite is seen in the plains until the Tendoo ghatee is ascended, when the soil is more or less of a reddish colour, and after ascending Ghoghurwahee ghatee the soil is entirely so; about Sulwah and Patun fossil shells, same as those from eighteen miles east of Jabulpoor, imbedded in indurated clay, are met with, and on the east side of the Mohtura ghatee is a small conical hill, containing similar shell breccia. In the latter are found the shell delineated in the Asiatic Journal for September 1839, plate. — fig. A. 11. originally found on the Pureyl ghat, which is on the first plateau on the Mekul hills overlooking the plains of Soohagpoor; a few bivalves also have been met with in this locality. Travertin was found near the summit of the Mohtura ghatee, and a reddish sandstone formed the bed of the Seeoonee nulla, a mile or so before its junction with the Nerbudda. With these exceptions laterite resting on basalt is the characteristic of the country.

The table land of Umurkuntuk constitutes the second plateau of the Mekul hills, and is but of small extent, six miles either way would bring you to a precipitous descent.

East from the Koond, less than a mile, is a bluff rock of basalt, over which a very small stream trickles with a fall of 252 perpendicular feet, and

which the Bramins assure you is the Son Bhuder, whereas the latter rises from a swamp near Pindraee, and the former joins the Arup, one of the feeders of the Mahanuddee. West from the Koond, four and a half miles, is the first fal of the Nerbudda, 90 feet, over compact basalt No. 90, and called Kupildhar, after the celebrated Moonee of that name; from the summit of the hill at Jogee ghat south to the crest of the descent at the Punkhee ghat north will be under six miles, and from the Kookre Moorghee ghat (or Ramgurh) to the Amanara ghat, is less, and these points give the extent of the table land at Umurkuntuk.

The spring at and about which the temples are built, is by no means the highest spot of the plateau, but I conjecture that where the Koond (which is a pukka irregular square basin, with steps leading down on every side) is, it was found that a spring ran all the year round, whereas from the upper points they generally dried up, as they nearly were when we visited the spot. The Brahmins have also added legends to these sources; that from the east is termed the Sonbhudr, and that from the north the Johilla, and you are gravely assured by these priests that the streams are running up the hill, to protect themselves from the fury of Nermada Mae. At the place are some 60 temples of sizes; that in which the image of Johilla the Nain (said to be iron, of which I have strong doubts) is a picturesque one, and so is another adjoining, of a totally different style to the generality, but in miniature like those built at Oodeypore and Putharee in Scindea's country; the whole of them are built of laterite with which the table land is capped. Of its height above the level of the sea, Mr. Jenkins the Resident of Nagpore in his report of that country states it at 3464 feet; but Lieut. Waugh and Rennie, who visited it in 1833 en route from Chunar to Jubulpore, I understand make it near 5000. There is a peculiarity of this elevation, which I may notice here; viz. that we were assured by the residents of the place that it rains throughout the year every third or fourth day. I have only to say that in two visits made to it, that such was undoubtedly the case as far as our observation went; now allowing its height to be that stated by the engineer officers, on what principle is this humidity to be accounted for? The peaks of the Mahadeo hills, Chowradeo, Jutta Shunkur, Dobghur rising out of the plain of Puchmurree, have an equal altitude, and nothing of the kind occurs there. Has the geological formation any thing to say to this meteorological difference? The Mahadeo hills are sandstone with rolled quartz pebbles, Umurkuntuk entirely laterite resting on basalt. A register of a thermometer kept by a native in an open verandah of a temple, from the 12th of April to the 24th June gave the following results; unfortunately no attempt was made to note the prevailing winds, clouds, or rain.

The Min of 18 days of April gave 58 and the Max 90—med. 74.

Ditto all May „ 62 ditto ditto 94—med. 78.

Ditto 24 days June „ 71 ditto ditto 95—med. 83.

Near the temple in which is the goddess of this river, is a Beejuck, but so defaced and broken that little of it could be decyphered by the most zealous antiquary; on the floor of an open temple is a small image, which the pundits assured me was that of Rewa Naick, a Bunjara, to whom the goddess appeared in a dream, and directed him to clear the site of the present Koond, then a dense mass of bamboo jungle; the date Sumbut 922* is very plain, and is within ten years of the period of the copper plate dug up at Koombhee, and forwarded by me (*Asiatic Journal*, for 1839). The animals met with on the Mekul hills are wild buffaloes, Gour, *Sciurus Elphinstonii*, *Buceros Malabaricus*, and on the table land of Umurkuntuk the solitary snipe, none of which are generally found in the valley of the Nerbudda east of Mundlah. I shall now proceed with the notes of the march into the Sohagpoor plains.

Hurree Tola, nine and a quarter miles. The road from the Koond at Umurkuntuk lies in a northerly direction, crossing a ridge of jungle and grass into a small valley, in which flows the Burat nulla, and at six miles is the crest of the ghat called the Punkhee ghat; it is long, but no where steep or difficult, the whole formation laterite, resting on basalt. On reaching the bottom you are in an extensive grass plain, with peaks of the Mekul Hills rising in the distance; the village a few huts, with the Johilla river flowing through the plain at the distance of a mile. The jungle on this side of the hills is not near so dense, or the trees so large, as on the Jogee ghat side; the sal trees fewer and smaller.

To Lukhora, thirteen miles. This distance is of one uniform feature, an extensive undulated grass plain, intersected by streams and springs in every direction, with the Johilla flowing through it, into which all the others run. The soil laterite, and all the beds of the nullas compact basalt.

Pureye, fourteen miles. The first 7 miles the country of the same nature as that on descending from the table land, if any thing rather more undulated; about seven and a half miles cross the Johilla, a fine stream, the bed is basalt mixed with some limestone No. 91. At Bouraha village about 9, the grassy plain may be said to terminate, as the road now becomes a constant series of bad stony ascents and descents of trap boulders, dense tree and grass jungle; at thirteen and a half the Backan nulla is passed, its bed of compact basalt, and lying about boulders of indurated green clay No. 92, and shell breccia No. 93, 94; about 50 or 60 yards to the right the nulla passed over a ledge of

* I enclose a transcript made by Captain Wheatly and myself, the explanation given by a pundit afterwards by no means agreeing with the oral communication on the spot.

some 40 or 50 feet, the sides of which had hexagonal basaltic columns ; from this nulla to camp the whole distance was strewn with the shell breccia in indurated clay No. 95, 96. The village small, and a dirty looking tank ; it is situated immediately on the verge of the range.

Kyrrha, seven miles. The ghat commences on passing the tank, and is a very bad, steep, stony descent for about a mile, all large trap boulders, mixed with some travertine No. 97, after which the real difficulty of the ghatee is passed ; then follows an inclined plane all limestone No. 98, and a descent of the same formation, when the level plain is attained ; from the tank to this is about 3 miles, the road good, strewn with boulders of shell breccia No. 99 ; cross the Bysaha nulla, sandstone No. 100, and the bed of the next, the Bygun, was limestone No. 101 ; the village of Kyrrha is on a sandstone eminence No. 102, 103, 104, 105 ; with No. 104, chukies (stone hand-mills) are made here.

Singpoor, six and a half miles. On leaving camp the Surpa nulla is crossed, the bed of which is a white very friable sandstone, the road good, some trifling nullas passed, all sandstone similar to that of the Surpa. In one or two places trap was seen overlying the sandstone ; shortly before getting to our ground, the sandstone deepens much in colour, specimens No. 105, 106 being reddish. At this village are seen some fine sculpture brought, we were told, from Urjolee, a kos or two distant ; the temple from which they were procured must have been a magnificent one. There are the remains of an old palace here, the pillars of which came from that place.

Sohagpoor, nine and a half miles. A good road the whole way, sandstone, no village seen, chiefly sal forest, but never very thick or the trees large, as you approach, more open ; the fort a small ghurree, town small, but there are remains of former size and grandeur by the numerous tanks, remains of temples, buildings, &c. One old temple is finely sculptured in the style of the Oodeypoor one north of Bhilsa ; adjoining is a square Koond sacred to Mahadeo, and at the distance of a quarter of a mile an eminence on which lie very extensive ruins of a temple ; a large image of Boudh was almost the only distinguishable piece of sculpture left. The natives assigned the name of some Rakhshus to this giant, which I have forgotten.

Putpura nulla, eleven miles ; good road, but a very uninteresting country, few villages or signs of cultivation ; the soil is sandstone, beds of the Nullas as at Kyrrha No. 105 ; passed the shoulder of a hill trap, when the hills close in, the great Mekul range to the south, and a low range in front, and to the right water very near the surface.

Palee, ten miles. On leaving camp enter rather thick jungle, road hilly and stony, cross a ridge called Moorcha Pahar, sandstone No. 108, so named from having the appearance of an entrenchment, then hilly ground

for four or five miles, when the road lies between two conical hills, Kimrae, No. 109, basalt, and so at the nulla of the same name No. 110, when the country is more open, trees chiefly sal, and some of good size. Ghoo-raree nulla sandstone No. 111, more compact than that at Khyrra Palee, all sandstone, and near a small tank adjoining the village there are ruins of a very large temple; the only image taken care of is that of Doorga slaying the giant Mahekhasoor, which is housed under a small hut, and from oil and attention is in fine preservation; in a westerly direction, about one and a half miles, we came to the Johilla river again, which was crossed, before above the ghat, and in its bed were traces of coal as per specimens No. 112; 113 is the sandstone forming the banks of the river. The bed, chiefly trap boulders, among which are those of syenite No. 115, large masses of a soft sandstone, with pyrites imbedded No. 116, sandstone and shale No. 117, and anthracite No. 118. On the top of the bank were boulders of shell breccia No. 119. Goochparoo $10\frac{1}{2}$ miles, road good all the way; about three and a half cross the Johilla river, a considerable stream, rather stony and bad; cross the Goorchut nulla, a sandstone conglomerate No. 120, after which a dreary plain up to Goochparoo, a very conspicuous peak; the circuit (W. N. W. two or three miles) to round which, and another two marches on, causes us to make so much northing of west.

Oomureea, eight miles. The first part of this march is jungly and stony, leading over a small ridge, about the middle of which is the Putpuree nulla (limestone No. 121,) and the boundary of our and the Rewah state; some distance on large blocks of limestone rise up in very irregular shapes, which are called Baynsa Dadur, No. 122, from thence a slight descent into a plain with small conical hills of basalt as at Kerantal, No. 123; the beds of the nullas are sandstone, as at Khyrra. Rather a large stream, the Oomrar, divides the villages of Gomureea and Khulesur, all sandstone. In a small nulla about two miles off, called the Manhunha, which runs into the Oomrar, traces of coal are found, as per specimen No. 124, sandstone 125. The bed of the nulla here is called Debee Koond, slate 126, from the circumstance of some forty years ago a fire having sprung out and consumed a Semul tree, and which spot has continued at intervals of every four or five years to emit a flame; I have no doubt that some similar trick as that described by Captain Kittoe is played off by the Bramins on discovering that the stone would burn.

Koureea, thirteen and a half miles. The road for the first four miles is hilly and stony, thin jungle, all sandstone, then an open cultivated plain up to some low hills of primitive formation, syenite No. 127, 128; cross the Nursaha nulla, the bed of which is granite No. 129, 130, winding through low hills round the shoulder of a small hill at the Sunreha nulla which and the bed

are sandstone No. 131 ; soon after cross the Muchrar nulla (?) No. 132, and pass between two conspicuous conical hills of trap to the Kirchola nulla, to the right or north of which is a Koond, where an annual fair is held ; it derives its sanctity from the austerities practised by Purutkal, a son of Brahma. In days of yore the village is said to have been a very considerable one. Our ground was distant about a mile, on a sandstone eminence, with a large tank, the village a good sized one ; this and the last march both in the Rewah territory.

About two miles in a northerly direction crossing a ridge of— ? No. 133 ; there is an extremely picturesque cascade of the Muchrar nulla over a sandstone rock, with veins on the upper part of indurated clay, as per specimens No. 134, 135, 136, 137.

Khuntera, near the Mahanuddee river, eight miles. The course of this march lay considerably to the south of west ; as at Koureea a very conspicuous peak called Bhangraj is rounded, road good, and chiefly through cultivation ; about six miles crossed the Mahanuddee a considerable river, its banks are sandstone No. 138, and its bed rolled boulders of trap. The soil was decomposed trap, and the small hills about the same.

Dheemurkherie, thirteen miles. The road on passing Khuntera lies through jungle not very thick, and chiefly between two low ranges, the formation of which is limestone No. 139. The Kirha nulla is crossed three or four times, after which a ridge of the hills called Chiraeabhar is passed over, of the same formation, and so continues up to the Kukraha nulla. From thence the road is fine cultivated plain of black soil, with trap hills about ; Khoombhee about nine miles. Road through fine cultivated land, with large villages up to the ravines, and small hills on the banks of the Heron which are laterite ; at this point terminates my notes on the marches.

Before concluding, I may make some general remarks on the geological features of the Mekul hills, three sides of which we had an opportunity of examining.

On passing along the south face, after descending the Rajadhar ghat, we find that limestone is the predominant rock, all the beds of the nullas and the lower part of the range up to Kuttame being so, and from thence to the foot of the Jogee ghat, granite, syenite, and gneiss, characterized also by an extreme dense forest jungle, the trees of which, especially sal, are many of them magnificent. On the other, or northern face, with exception of some limestone at the last descent of the Purey ghat, the prevailing rock of the Sohagpoor plains is sandstone, some trap occasionally shewing itself in beds of nullas, and small conical hills rising out of the plain. The jungle on this side is never dense, and the trees comparatively stunted. The upper part of the range is uniformly basalt, capped

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81



MAP
SHEWING THE ROUTES
from
Jubbulpore to Umurkuntuk
P.A. Reynolds Dlt.



SPONEE

with laterite; a good view is afforded at the eastern point of the bluff rock at Umurkuntuk overlooking the country towards Ruttunpoor, and again at the fall of Kupildhar, where the Nerbudda cuts through the laterite, exposing the compact basalt.

Fossil shells were found under Patungurh, east of the Mohtura ghat, and just above the Purey ghat.

In addition to the traces of coal noted in the route as found in the bed of the Johilla river near Palee, and in a small nulla near Khulesar Omareea of Rewah, Mr. Fraser had intelligence from natives of coal being found across the Soan in two small nullas called the Hewye and Buroona nullas, near the village of Sonhegaon in Sohagpoor district, specimens of which accompany the present series.

In conclusion, I beg to forward the route from Umurkuntuk to Jubulpore, as received from Lieutenants Waugh and Rennie, who in 1833 came across the country from Chunar to this.

M. F.

Kurrunjeeah, ...	9 0	Nulla,	Bad ghat, road good, village small.
Kudjurwar, ...	8 4	Tank,	Road good, village fair.
Kunjunpoor, ...	12 6	Nulla,	Road bad.
Jhilmilla, ...	7 0	Ditto,	Road fair, stony.
Beedaipoor, ...	12 3	Ditto,	Ditto.
Saipoor, ...	8 0	Tank,	A ghat, village pretty fair or large.
Oodhar nulla, ...	9 0	Nulla,	Road fair, village small.
Burgaon, ...	10 0	Ditto,	Road bad, village fair.
Shaipoora, ...	3 6	Tank,	Road good, large village (a taccoor.)
Serwae on the			
Mahanuddee, ...	11 3	Stream,	Road not good, village small.
Koondum, ...	12 0	Tank,	Road good (from this tank rises the Heron)
Unyher, ...	16 4	Well,	Road very good, village small.
Jubulpoor, ...	12 0		Road good.

Total, 132 2

JUBULPORE, 5th October, 1840.

NOTE.—The inscription copied by Dr. Spilsbury is not of consequence, being, it would appear, a mere record of the name of the decorator of the place, a private person. I have not published a translation of it, as my Pundit was by no means confident of his rendering, the original not being correct.

